

ATTACHMENT J1

Fort Dix Water System

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J1.0 Fort Dix Water System

J1.1 Fort Dix Overview

Fort Dix (Installation) is a U.S. Army Installation situated in the center of New Jersey, seventeen miles southeast of Trenton, seventy two miles south of New York City and forty-five miles east of Philadelphia. The Installation covers over 30,000 acres of wooded New Jersey countryside and shares common borders with McGuire Air Force Base and Naval Air Station Lakehurst. The mission of Fort Dix is to provide a high quality training environment for the Army Reserve component of the Armed Services. Construction was begun in June 1917 and the Installation has been a training center for all military actions since that date.

J1.2 Water System Description

J1.2.1 Water System Fixed Equipment Inventory

J1.2.1.1 System Description

The potable water system at Fort Dix consists of ground and surface water supply, transmission, treatment, storage and water line distribution. The majority of the water produced for the Main Cantonment is from surface water; however, ground water is available during emergency conditions. Ground water is used in the numerous range areas.

J1.2.1.1.1 Water Supply

The primary water supply for Fort Dix is surface water from the Rancocas Creek, located about 5 miles from the water plant. The raw water is captured at the river and pumped by three pumps via two 16-inch water lines to the water treatment plant. The pumping station and pipeline can deliver about 4 MGD of raw water to the treatment plant. Five water wells are available to provide water to the treatment plant during periods of emergency. Nine water wells provide water in the range areas of the Installation.

J1.2.1.1.2 Water Treatment

The water treatment plant was constructed in 1932. The original plant design flow was 2 MGD. Sedimentation tanks have recently been added to the plant and a clearwell expansion from 500,000 to 1,000,000 gallons [has been designed and is a potential funding candidate](#). In addition, an upgrade to the plant filters and the addition of plate settlers are in the planning stage. After all planned projects are completed the water treatment plant will have a capacity of approximately 9 MGD.

Treatment at the plant consists of chemical addition, flocculation, sedimentation, final filtering, and disinfection with chlorination. After treatment, the water flows to the ground storage clear water reservoir. The treated water is then pumped from the ground storage to elevated tanks that provide distribution storage and pressure.

J1.2.1.1.3 Potable Water Distribution

The water distribution system consists of approximately 525,409 linear feet of pipe including service lines and larger distribution lines with diameters ranging from 2 inches to 16 inches in diameter. Piping materials vary from the older cast iron to the newer PVC. There are approximately 341 isolation valves and 606 fire hydrants. There are a number of metering

vaults within the potable water distribution system.

There are nine water storage tanks providing supply storage for normal water use, fire protection and emergency uses. There are three tanks within the main cantonment area; two steel elevated 500,000 gallon tanks are in the southern portion and a 1,000,000 elevated tank is located in the northern area. Six tanks with a total capacity of 610,050 are located in the range areas.

J1.2.1.2 Points of Demarcation

The Fort Dix potable water distribution system consists of all components from the Rancocas Creek intake and the water wells to the point where water is supplied to end-users. The beginning point of demarcation was described above in sections J1.2.1.1.1 through J1.2.1.1.3. The point of demarcation for each end user is defined as the point or component on the distribution system where ownership changes from the utility owner to the building owner. In most cases the point of demarcation is the first upstream component (i.e., meter, valve, regulator, etc.) of the system located outside of the facility footprint.

Table 1 identifies the major types of service and the general locations of the point of demarcation with respect to each building served by the distribution system.

TABLE 1
Water System Points of Demarcation
Water System, Fort Dix, New Jersey

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the downstream side of the water meter or valve (closest apparatus to the exterior of the structure)	Non-residential service. Water meter or valve is located on the service line entering the structure within 25 feet of the exterior of the structure.	
Point where the service line enters the structure. <i>Note: Service valve may be installed within 25 feet of the structure at any time. Downstream side of the service valve will become the point of demarcation.</i>	Non-residential service. No water meter, backflow prevention device, or valve exists on the service line entering the structure within 25 feet of the exterior of the structure.	

J1.2.1.3 Inventory

TABLE 2A

Fixed Inventory, Water Piping Summary
Water System, Fort Dix, New Jersey

Approximate Year of Construction (Quantities in Linear Feet)							
Size	1910s	1940s	1950s	1980s	1990s	Unknown	Total
2 in.	0		1,000	0	0	0	1,000
3 in.	0		440	0	0	0	440
4 in.	0		1,200	0	0	0	1,200
6 in.	0		81,320	20,640	0	0	101,960
8 in.	0		75,200	30,640	11,160	0	117,000
10 in.	0		9,640	4,200	9,000	0	22,840
12 in.	0		17,520	4,800	0	0	22,320
16 in.	0	23,760	8,600	12,120	23,760	0	68,240
Unknown	0		0	0	0	190,409	190,409
Total	0	23,760	194,920	72,400	43,920	190,409	525,409

TABLE 2B

Fixed Inventory, Water System Storage Facilities
Water System, Fort Dix, New Jersey

Description	Size	Year of Construction
Tank 5903, Steel, Elevated – Main Cantonment	0.50 MG	1941
Tank 6969, Steel, Elevated – Main Cantonment	0.50 MG	1941
Tank 3561, Steel, Elevated – Main Cantonment	1.00 MG	1983
Tank 9006 – Range HQ	0.01 MG	1970
Tank 9008 – Range HQ	0.15 MG	1988
Tank 9374 – NJ Army National Guard	0.15 MG	1999
Tank 9510 – Times Square	0.15 MG	1999
Tank 9434A – Bivouc 22	50 Gallon	2000
Tank 9447A – Bivouac 18	0.15 MG	1999
Note: MG = million gallons		

TABLE 2C

Fixed Inventory, Water System Pump Stations
Water System, Fort Dix, New Jersey

Well	Location	Size	Depth (Feet)	Year of Construction
Well 1 (Building 4404)	Main Cantonment	1 MGD	980	1941
Well 2 (Building 4295)	Main Cantonment	1 MGD	1,050	1941
Well 3 (Building 1903)	Main Cantonment	206 GPM	157	1954
Well 4 (Building 5876)	Main Cantonment	1 MGD	1086	1943
Well 5 (Building 5280)	Main Cantonment	1 MGD	1,104	1971
Well 6 (Building 1190)	Main Cantonment	1 MGD	1,140	1971
Building 9006A	Range HQ	50 GPM	457	1975
Building 9509	Times Square	35 GPM	98	1999
Building 9446A	Bivouac 18	35 GPM	103	1999
Building 9433A	Bivouac 20	35 GPM	118	1999
Building 9336	Bivouac 22A	35 GPM	125	1999
Building 9668	Stratcom Site	35 GPM	135	1964
Building 9901	Brindle Lake	35 GPM	300	1999
Building 9057	Range 14	20 GPM	290	Unknown
Building 9332	1093 Pem Rd.	35 GPM	180	1942
Building 9489				2004
Building 9992	Range 1			2002
Building 8533	ASP	70 GPM	260	2003
Building 9374	UTES			1981
Building 9607				2002

TABLE 2D

Fixed Inventory, Water System Component Summary
Water System, Fort Dix, New Jersey

Approximate Year of Construction							
Size	1910s	1940s	1950s	1980s	1990s	Unknown	Total
Fire Hydrants	0	0	0	606	0	0	606
Valves	0	0	0	341	0	0	341

J1.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools

Table 3 lists other ancillary equipment (spare parts), and **Table 4** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 3

Spare Parts

Water Distribution System, Fort Dix, New Jersey

Qty	Item	Make/Model	Description	Remarks
No spare parts are included with the Fort Dix Water System				

TABLE 4

Specialized Vehicles and Tools

Water Distribution System, Fort Dix, New Jersey

Qty	Item	Make/Model	Description	Remarks
No specialized vehicles or tools are included with the Fort Dix Water System				

J1.2.3 Water System Manuals, Drawings, and Records

Table 5 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 5

Manuals, Drawings, and Records

Water Distribution System, Fort Dix, New Jersey

Qty	Item	Description	Remarks
Fort Dix maintains a limited collection of technical manuals, operational manuals, drawings, and records on the installed components of the water distribution system. This information will be transferred to the new owner during the transition period. System maps will be available in the bidders' library.			

J1.3 Specific Service Requirements

The service requirements for the Fort Dix water distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Fort Dix water distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

J1.3.1 Digging Permits

J1.3.1.1 Contractor-Provided Permits

Contractor shall participate in the Fort Dix Department of Public Works (DPW) digging permit process. The Contractor shall complete the section of form FHT 420-X10, Coordination for Land Excavation, which may impact on the integrity of his Utility Systems and the safety of the requestors and return it to the DPW at Building 5318, Fort Dix, New Jersey for each permit within 3 working days of receipt of the form from DPW. As part of this process, the Contractor shall routinely accept and process digging permit requests from Government work force; military units; maintenance, construction, and Army operations contractors; cable and phone maintenance and installation companies; fence rental companies; individual residents, and additional entities as identified by Contracting Officer to have a valid need for a digging permit. Contractor shall identify methodology of accepting, processing, approving, and listing reason(s) for disapproval. Contractor shall be responsible for all repairs, costs, and damages due to excavations by others for which he did not properly mark his utilities as part of the DPW digging permit process.

J1.3.2.2 Fort Dix-Provided Permits

The Contractor shall first obtain digging permits directly from DPW for utilities owned by the Government before any drilling, digging, or excavation is undertaken. The Contractor shall provide a completed form FHT 420-X10, Coordination for Land Excavation, to the DPW Building 5318, Fort Dix, New Jersey for each permit. Allow 14 Working days for Government review of digging permit requests. A digging permit for a specified area of excavation expires 30 days after the issue date; Contractor must re-apply for a new permit to perform excavation in the area if the excavation was not started within the 30-day period. Permits will identify all underground utilities within 5 feet of the designated area. Contractor shall be responsible for all repairs, costs, and damages due to his excavations that fail to comply with the DPW digging permit process, including excavations extending beyond areas that have been cleared for excavation.

J1.3.3 Inspection and Maintenance Program

J1.3.3.1 Water Storage Tanks

The Contractor shall allow the Government access to operate and maintain any communication equipment, obstruction lights, emergency warning equipment, public address equipment, and other Government equipment on water storage tanks being privatized. The Contractor shall develop a procedure for granting the Government access. This procedure shall be submitted to the Contracting Officer for approval.

The Contractor shall own, maintain and operate any cathodic protection systems for the water storage tanks and other applicable metal components of the water distribution system. The Contractor shall determine what is required and shall implement cathodic protection as

necessary to comply with applicable rules and regulations. The Government reserves the right to review the Contractor's cathodic protection system records.

The Contractor shall adhere to Fort Dix Design Guides for all painting and markings on water storage tanks.

J1.3.3.2 Fire Flow

The Contractor shall perform flow testing and marking of fire hydrants IAW National Fire Protection Association standards/recommended practices. The Government reserves the right to review the Contractor's flow test records.

The Contractor shall coordinate any changes to the water distribution system that may affect fire flow capabilities with DPW and Fort Dix Fire Department.

J2.3.3.4 Cathodic Protection System Maintenance

The Contractor shall own, operate, and maintain the water distribution system cathodic protection systems for carbon steel piping and tanks IAW applicable standards. The Contractor shall determine what is required and shall implement cathodic protection as necessary to comply with applicable rules and regulations. The Government reserves the right to review the Contractor's cathodic protection system records.

J1.3.6 Fire Control and Safety

The Contractor shall abide by Fort Dix fire protection requirements. The utility system purchased by the Contractor may include facilities. These facilities may or may not include fire alarm systems. Where required by federal, state or local regulation, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.

J1.3.7 Cost of Supporting Utilities

The Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the utility system being privatized. Supporting utilities are defined as the supply of electricity necessary to own, operate, and maintain the utility system. The Contractor shall coordinate with Fort Dix DPW and the Contracting Officer for any supporting utilities to be provided by the Government.

J1.4 Current Service Arrangement

The Army owned water system at Fort Dix obtains raw water from the Rancocas Creek, New Jersey. The flow is sufficient to satisfy current Installation requirements; however, the environmental withdrawal limit may be changed. For this reason alternate proposals are being sought as a component of this RFP. The estimated daily maximum demand is approximately 2.5 MGD and the estimated annual consumption is 912.5 MG.

J1.5 Secondary Metering

Between the point of delivery and the end user points of demarcation, the Contractor shall own the existing meters and shall install additional meters at new and upgraded locations as

directed by the Contracting Officer. Contractor shall install or cause to have installed utility meters as requested by the Contracting Officer.

J1.5.1 Existing Secondary Meters

Table 6A lists the existing (at the time of contract award) meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3, *Metering*, J2.3.5.3, *Meter Reading*, and J2.6, *Monthly Submittals*.

TABLE 6

Existing Secondary Meters

Water Distribution System, Fort Dix, New Jersey

Line	Meter Location	Meter Number	Multiplier
1	1199	12826731	1
2	6040	4567667	1
3	5359	8606552	1
4	5652		1
5	6700	92010818	1
6	5613		100
7	5391		1
8	8401-1		1
9	8401-2		1
10	6741	10262135	1
11	5880	10281807	1
12	5919	10262131	1
13	5951	10323119	1
14	5954	10261833	1
15	5955	10346239	1
16	5956	10261831	1
17	5957	10261832	
18	5958	10262134	
19	5994	10262132	
20	FCI-5910		1
21	FCI-5904		1
22	FCI	#1	1
23	FCI	#2	1
24	FCI	#3	1

Line	Meter Location	Meter Number	Multiplier
25	FCI	#4	1
26	FCI	#5	1
27	FCI	#6	1
28	FCI	#7	1
29	FCI	#8	1

J1.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 7**. New secondary meters shall be installed IAW Paragraphs C.3.3.1, *Future Meters*, and C.13, *Operational Transition Plan*. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3.3, *Metering*, and J1.6 below.

TABLE 7

New Secondary Meters

Water Distribution System, Fort Dix, New Jersey

Meter Location	Meter Description
None	

J1.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW Paragraph G.2, *Submission and Payment of Invoices* and Paragraph J2.3.1, *Non-Government Installed Utilities Infrastructure*). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. The Contractor's monthly invoice shall include segregated costs IAW with each CLIN. Costs shall be segregated into two categories: costs associated with Housing areas and costs associated with non-Housing areas. The Contractor shall provide sufficient supporting documentation with each monthly invoice to substantiate all costs included in the invoice for each CLIN as approved by the Contracting officer. The proposed system of accounts shall be made available in electronic format as directed by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name: DIRECTORATE OF PUBLIC WORKS
Address: 5320 DELAWARE AVENUE
 FORT DIX, NEW JERSEY 08640

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: DIRECTORATE OF PUBLIC WORKS
Address: 5320 DELAWARE AVENUE
 FORT DIX, NEW JERSEY 08640

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month's readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

Name: DIRECTORATE OF PUBLIC WORKS
Address: 5320 DELAWARE AVENUE
 FORT DIX, NEW JERSEY 08640

J1.7 Water Conservation Projects

IAW Paragraph C.3.4, Energy and Water Efficiency and Conservation, the following projects have been implemented by the Government for conservation purposes.

- There are no energy savings projects associated with the utility system being privatized.

J1.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Fort Dix boundaries.

J1.9 Off-Installation Sites

Off-installation sites included in the privatization of the Fort Dix water distribution system include the New Lisbon Pumping stations and portions of the transmission mains that connect this facility with the water treatment plant.

J1.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 8** provides a listing of projects that may require special transition coordination.

TABLE 8
 Service Connections and Disconnections
Water System, Fort Dix, New Jersey

Location	Description
Fort Dix	A water distribution project including relining of cast iron pipes and installation of meter pits and meters will be initiated as money becomes available.
Water Treatment Plant	A clearwell storage expansion, increasing capacity from 500,000 gallons to 1,000,000 gallons has been designed and is a candidate for funding.
Water Treatment Plant	An upgrade of filters and the addition of plate settlers is in the planning stage.
New Lisbon Water Supply Lines	The current cost for the USGS to maintain the gauging station and the internet data system to the New Lisbon Creek is \$14,000.

J1.11 Government Recognized System Deficiencies

Table 9 provides a listing of Government recognized deficiencies. The deficiencies listed may be physical deficiencies, functional deficiencies, or operational in nature. If the utility system is sold, the Government will not accomplish a remedy for the recognized deficiencies listed. The Offeror shall make a determination as to its actual need to accomplish and the timing of any and all such deficiency remedies.

TABLE 9

System Deficiencies

Water Distribution System, Fort Dix, New Jersey

Deficiency Description	System Component	Type of Project
Distribution Pipes	A significant portion of the potable water distribution piping is over 50-years old; leaks and breaks are common.	Pipe renewals and replacements will be required.

J1.12 Environmental Compliance

The contractor is required to comply with all applicable State and Federal laws, State and Federal regulations, and Army instructions in effect at the time of performance. The laws and regulations include, but are not limited to: environmental and occupational safety and health. The contractor shall be responsible for compliance with construction and operating permits, and also responsible for penalties, fines, or natural resource damage claims that may be required or assessed by the State of New Jersey, Federal or Local Governments resulting from performance, or failure to perform, during the course of performance.